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CableVision

INFORMATION AND ANALYSIS FOR CABLE TELEVISION MANAGEMENT

CABLE RAISES HOWL OVER SYNDICATED EXCLUSIVITY

CABLE NETS TO OFFER PACKAGE AD BUYS

J.C. PENNEY PREPARES NEW APPROACH TO TV SHOPPING

CABLE ACT PROVING USEFUL IN WAR ON THEFT

ATC/HI VENTURE POISED FOR ACQUISITION CAMPAIGN

**ANNUAL CONSTRUCTION SURVEY:
\$1.4-BILLION YEAR IN THE OFFING**



CableVision

FRONT LINE

Syndicated exclusivity battle 12
With the Federal Communications Commission signaling its intention to re-impose syndicated exclusivity rules, cable interests are preparing to mount a concerted campaign against the action.

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The annual construction survey finds cable companies have filled their agendas with long-postponed projects, culminating in prospects for the biggest construction year since 1983.



On the cover, with designs on Queens is ATC's Bob Shammas, who is drawing plans to wire the New York borough. Photograph by Ron Rudolph.

Pay Per View Supply Chart

March

	Source		Source
Aliens (3/19) MPAA Rating: R Cast: Sigourney Weaver. Running Time: 99 mins.	20th Century-Fox	Heathcliff: The Movie (4/23) MPAA Rating: G Cast: Animated. Running Time: 74 mins.	Paramount
Club Paradise (3/11) MPAA Rating: PG-13 Cast: Robin Williams, Peter O'Toole, Rick Moranis. Running Time: 96 mins.	Warner Bros.	Hey There, It's Yogi Bear (4/23) MPAA Rating: G Cast: Animated. Running Time: 89 mins.	Paramount
Code Name: Wild Geese (3/16) MPAA Rating: R Cast: Lee Van Cleef, Ernest Borgnine, Nimsy Farmer, Klaus Kinski. Running Time: 102 mins.	HBO Enterprises	A Man and a Woman (4/7) MPAA Rating: NR Cast: Anouk Amies, Jean-Louis Trintignant, Pierre Barouh, Valerie LaGrange. Running Time: 102 mins.	Warner Bros.
Hard Traveling (3/16) MPAA Rating: PG Cast: Ellen Geer, J.E. Freeman, Barry Corbin. Running Time: 107 mins.	HBO Enterprises	A Man and a Woman: 20 Years Later (4/7) MPAA Rating: PG Cast: Anouk Amies, Jean-Louis Trintignant, Richard Berry, Evelyn Bouix. Running Time: 112 mins.	Warner Bros.
Haunted Honeymoon (3/1) MPAA Rating: PG Cast: Gene Wilder, Gilda Radner, Dom DeLuise. Running Time: 83 mins.	Orion	Men's Club (4/23) MPAA Rating: R Cast: Roy Scheider, David Dukes, Frank Langella. Running Time: 101 mins.	Paramount
Night of the Creeps (3/1) MPAA Rating: R Cast: Jason Lively, Steve Marshall, Jill Whitlow, Tom Atkins. Running Time: 88 mins.	Tri-Star	Modern Girls (4/1) MPAA Rating: PG-13 Cast: Daphne Zuniga, Virginia Madsen, Cynthia Gibb. Running Time: 84 mins.	Paramount
Opposing Forces (3/15) MPAA Rating: R Cast: Tom Skerrit, Lisa Eichorn, Richard Roundtree. Running Time: 107 mins.	HBO Enterprises	The Name of the Rose (4/1) MPAA Rating: R Cast: Sean Connery. Running Time: 129 mins.	20th Century-Fox
The Peanut Butter Solution (3/16) MPAA Rating: PG Cast: Matthew MacKay, Michael Hogan, Alison Podbray. Running Time: 91 mins.	HBO Enterprises	Shadow Play (4/30) MPAA Rating: R Cast: Dee Wallace Stone, Cloris Leachman. Running Time: 98 mins.	HBO Enterprises
Ruthless People (3/19) MPAA Rating: R Cast: Danny DeVito, Bette Midler. Running Time: 94 mins.	Disney	Soul Man (4/2) MPAA Rating: PG-13 Cast: C. Thomas Howell, Rae Dawn Chong, James Earl Jones, Ron Reagan. Running Time: 104 mins.	HBO Enterprises
Shang-hai Surprise (3/1) MPAA Rating: PG-13 Cast: Sean Penn, Madonna. Running Time: 97 mins.	MGM/UA	Steaming (4/30) MPAA Rating: R Cast: Vanessa Redgrave, Sarah Miles, Diana Dors. Running Time: 96 mins.	HBO Enterprises
Stand By Me (3/1) MPAA Rating: R Cast: River Phoenix, Wil Whitaan, Jerry O'Connell, Kiefer Donaldson, Corey Feldman. Running Time: 87 mins.	Columbia	Stewardess School (4/1) MPAA Rating: R Cast: Donny Most, Audrey Landers, Sandahl Bergman. Running Time: 87 mins.	Columbia
Touch and Go (3/1) MPAA Rating: R Cast: Michael Keaton, Maria Conchita Alonso, Ajay Naidu. Running Time: 102 mins.	Tri-Star	Tough Guys (4/23) MPAA Rating: PG-13 Cast: Burt Lancaster, Kirk Douglas. Running Time: 104 mins.	Touchstone

April

	Source		Source
Dancing in the Dark (4/20) MPAA Rating: PG-13 Cast: Martha Henry, Neil Monroe. Running Time: 98 mins.	HBO Enterprises	Where the River Runs Black (4/1) MPAA Rating: PG Cast: Alessandro Rabelo, Charles Durning, Peter Horton. Running Time: 96 mins.	MGM/UA
Ferris Bueller's Day Off (4/1) MPAA Rating: PG-13 Cast: Matthew Broderick, Mia Sara, Jeffrey Jones. Running Time: 103 mins.	Paramount	Whoopie Boys (4/1) MPAA Rating: R Cast: Michael O'Keefe, Paul Rodriguez. Running Time: 84 mins.	Paramount
The Fly (4/15) MPAA Rating: R Cast: Jeff Goldblum, Geena Davis. Running Time: 100 mins.	20th Century-Fox	Note: Running times are approximate. Film information provided to International Thomson Communications Inc. by distributors. NR indicates film not rated by MPAA * Unavailable at presstime.	

Pay Per View Services Profile

Service:	Cable Video Store	Request Television	Telstar Channels	Viewer's Choice
Delivery:	Satcom 4, transponder 16	Galaxy 1, transponder 12	Interrum Standalone, presently testing on Telstar 303	VC-1 Satcom 3R, transponder 5 VC-2 Galaxy 1, transponder 16
Encryption:	VideoCipher II	VideoCipher II	Presently testing G. I. Starloc IV	VideoCipher II
Programming:	All movies, 24 hours per day 50-60 titles per month.	Two to four major motion pictures per week. special events	Channels 1&2: two major motion pictures on a biweekly rotation. Channel 3: three major motion pictures per week, special events	One major motion pictures per week special events
Subscribers:	Field trial basis; currently serving 10 MSO's nationwide. (2,500+ Impulse addressable subscribers)	Available in systems serving 2.7 million subs (1.8 million addressable)	Available in systems serving 74,000 subs (11,500 addressable).	Available in systems serving 2 million subs (1.6 million addressable)

Projections call for \$1.4-billion outlay in '87

Construction survey finds market booming

Converters, amplifiers lead surge in wake of a disappointing '86

By Roger Brown

This year has dawned amid a flurry of construction activity that hasn't been seen in the cable business for a long time. If cable operators stay true to their budgets, as reported to *CableVision* for its 12th annual construction survey, 1987 promises to be the biggest year in construction since 1983, with some \$1.4 billion slated for newbuilds, rebuilds and upgrades, representing a 45 percent increase over 1986 spending. (See p. 32 for chart of complete survey results.)

The surge couldn't come at a better time for the manufacturers, distributors and contractors who are just coming out of the worst year since 1979, in terms of total industry construction expenditures.

For a year that was originally forecast to experience only a slight downturn in construction activity from the previous year, 1986 instead turned out to be what can be characterized as the "Year of Deferment."

For the first time since 1979, the industry spent less than \$1 billion on construction-related activity, building out just 27,000 miles of new plant. Also, for the first time, replacement plant construction outpaced newbuild mileage, with just under 30,000 miles of cable plant being rebuilt and upgraded.

Nearly every expense category came in significantly under the numbers projected a year ago, with two notable exceptions: headend equipment and traps. Operators, gearing up to put in place new channel lineups and expanded basic service after the deregulation era was to begin Jan. 1, 1987, spent twice as much in this category than was foreseen earlier. And trap vendors, buoyed by TCI's much-publicized resistance to addressability and other operators' movement to hybrid systems, were the beneficiaries of additional spending in that area, according to the 12th annual survey.

But a large share of construction spending that should have occurred in 1986 was put off because of the spectacular increase in system buying and selling that occurred before the new tax law took effect. Almost unanimously,

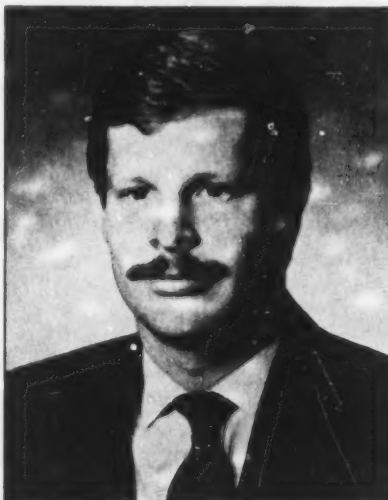
survey respondents speculated that funds originally earmarked for rebuilds and upgrades were instead held back to finance acquisitions or because particular systems were expected to be sold in the near future.

But construction and plant upgrades can be postponed only so long if the system's new owner hopes to improve service and begin realizing a return on his investment, and it appears that 1987 will be the "Year of the Rebuild," in the words of one contractor. Distributors, suppliers and contractors contacted for the survey all reported significant increases in activity and expressed confidence that the pace will continue through December. Some have even taken the optimistic outlook that much of the activity will last well into 1988.

CableVision has determined that expenditures in 1987 will top out at about \$1.423 billion, a level of spending not seen since 1983, when the industry laid out \$1.488 billion. Predictably, the newbuild side of the ledger will continue its downward trend, to just more than 26,000 miles, while nearly 49,000 miles of plant gets replaced or upgraded.

Double the converters

Areas of significant spending will



Ed Breen

include line amplifiers, sales of which are predicted to double in 1987 as operators jettison outdated electronics and insert high-performance amplifiers to increase bandwidth. But the one area expected to see the biggest influx of new money is converters, where operators said they expect to shell out a total of \$600 million, double the amount spent last year. Two-thirds of all converter sales are expected to be for addressable boxes. But plain non-addressable units are also in hot demand.

The market forces responsible for the dramatic turnaround in spending are many and heavily dependent upon each other. Deregulation, system sales, low interest rates and excitement over new revenue opportunities have acted synergistically to create an upbeat construction marketplace, allowing manufacturers to move built-up product inventory and beef up production to meet the new demand.

Ed Breen, vice president of marketing for Jerrold's subscriber equipment division, said he expects a "fairly strong year" in converter sales, due mostly to deregulation. Breen said he noticed an increase in business in the latter half of 1986 and expects the level to remain constant at least through the first half of 1987. Beyond that, he said, he's unsure of what to expect.

Breen added that plain converters will remain in demand for the first six months of the year because operators who have expanded their basic offerings by collapsing tiers must now offer converters to subscribers who previously did not need them. Addressable sales have also increased, but at a slower pace, said Breen, who believes that addressability will continue to sell well past the current "bubble" of activity. "A lot of people are upgrading their existing systems with addressable technology," Breen said.

The surge in sales also has Steve Necessary, marketing manager for subscriber and distribution products at Scientific-Atlanta, "cautiously optimistic." Necessary, whose company has seen a "fairly dramatic upturn in demand" for product, also credits deregulation for lifting sales out of the

SOLD April, 1986 DENT COUNTY TV CABLE SYSTEM, INC. has sold its cable television assets to HFG WHEELERS, INC. The sale represents 2,600 basic subscribers	SOLD December, 1986 SEMO COMMUNICATIONS, INC. & QUALITY CABLE CORP. have sold a portion of their cable television assets to HFG C4 MEDIA MID-AMERICA II LIMITED PARTNERSHIP The sale represents 2,500 basic subscribers
SOLD July, 1986 BUTLER CABLEVISION, INC. & INDESAT, INC. have sold their cable television assets to HFG C4 MEDIA MID-AMERICA II LIMITED PARTNERSHIP The sale represents 2,200 basic subscribers	SOLD December, 1986 FIRST CABLE AND LAND CORP. has sold a portion of its cable television assets to HFG COLE COUNTY CABLEVISION, INC. The sale represents 2,200 basic subscribers
SOLD November, 1986 UNIVERSAL TELECOMMUNICATIONS, INC. has sold its cable television assets to HFG EMPIRE COMMUNICATIONS OF OKLAHOMA	SOLD December, 1986 OZARK COMMUNICATIONS, INC. has sold its cable television assets to HFG C4 MEDIA MID-AMERICA II LIMITED PARTNERSHIP
SOLD May, 1986 CASA DE ORO AUTO SUPPLY, INC. has sold its cable television assets to HFG CABLE TV OF FORT GIBSON, INC.	SOLD April, 1986 TONOPAH TV, INC. has sold its cable television assets to HFG EMPIRE COMMUNICATIONS, INC.
SOLD December, 1986 WRIGHT COMMUNICATIONS, INC. has sold its cable television assets to HFG C4 MEDIA MID-AMERICA II LIMITED PARTNERSHIP	ACQUIRED June, 1986 CABLE-VIDEO ENTERPRISES, INC. has acquired a portion of the cable television assets from HFG FAYETTE CABLEVISION, INC. The sale represents 2,400 basic subscribers
SOLD December, 1986 BLUE WATER CABLE, INC. has sold its cable television assets to HFG EMPIRE CABLE OF KANSAS, INC. A subsidiary of Empire Communications, Inc.	SOLD August, 1986 PAR CABLE, INC. sold its Chicago cable television assets to HFG DORN COMMUNICATIONS
SOLD May, 1986 FOWLER MASTER ANTENNA SYSTEMS, INC. has sold its cable television assets to HFG HORIZON CABLEVISION OF MISSISSIPPI	SOLD September, 1986 NORTH BEND CABLE TV has sold its cable television assets to HFG SCOPE CABLE TELEVISION
SOLD December, 1986 EMPIRE CABLE OF ARIZONA, INC. redeemed its outstanding stock owned by HFG KINER CABLE, INC. This sale affects 2,500 basic subscribers	ACQUIRED December, 1986 SUBURBAN CABLE PROPERTIES, INC. has acquired the cable television assets from HFG MARQUE II ENTERPRISES, INC. & MIS-TV, INC.

doldrums. "A lot of people began reacting (to the implementation of deregulation) late last year... so when we entered January, the momentum was already rolling."

Addressable rebound

The impetus that rate deregulation provides for systems to perform upgrades seems to be driving much of the demand for distribution equipment, said Necessary, who also noted that sales of addressable equipment have experienced new growth. "A year ago, the trend was away from addressable converters, everyone wanted basic ones. Now the market is up for both kinds. It seems to be a halting of the basic-only trend."

The story's the same at Pioneer, where sales are so strong the converter company cautiously predicts it will sell more than a million units for the first time. "This is going to be a great year for us," said Mike Hayashi, marketing manager. Although sales are at a fairly constant level now, the increase in orders began last September, when converter sales "surged overnight," according to Hayashi, who expects the demand to remain up through December 1987.

Characterizing sales of addressable boxes as "very good," Hayashi nevertheless said the sudden upswing came from sales of "plain jane" units with remote control. Those units alone will experience a 20 percent to 30 percent sales jump over 1986, Hayashi predicted.

If the present level of demand continues, Tele-Wire Supply Co. will experience a "record year," according to Marty Ingram, director of sales and marketing for the product distribution firm. Ingram credits deregulation and operators' attempts to purchase product under the old tax law for taking 1986 from a "fair" sales year to a dramatic recovery. Ingram added that he doesn't see any downturn in calendar 1987, which he fully expects to be a "banner year."

As a full-line distributor, Ingram said items in most demand are construction-related material and drop-related material. Tele-Wire is beginning to experience some shortages of construction material, but since the company stocks 30 days to 60 days of inventory, its customers haven't felt the crunch yet. Nevertheless, the company "can't ship the material fast enough," Ingram reported. Drop material like multi-taps, line extenders and trunk amplifiers are also becoming harder to find, often requiring 60- or

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MANAGEMENT

90-day lead times, he said.

Meanwhile, Bill Kloss, national sales manager at Trilogy, a coaxial cable manufacturer, predicts just a slight increase in sales during 1987. Led by the major urban builds and an upswing in rebuild activity, Kloss said demand will likely peak during the summer construction months, but added, "The valleys won't be as deep" as they were last year.

The outlook at General Instrument's Comm/Scope cable division is similar. Marketing Manager Steve Coffey said orders should remain constant through the year, but doubted that he'd see any major uptick in sales. The lack of excitement at this level is more evidence that MSOs are planning upgrades instead of complete rebuilds in many instances.

Consequently, high performance amplifiers are in great demand, according to Bob Young, director of distribution product marketing at General Instrument. These amps—such as power doubling and feed forward—allow the operator to save as much existing plant as possible while achieving higher gain and better distortion performance.

Additionally, Young said, the major city builds and systems scheduled to be rebuilt are finally getting the attention they deserve. "For years it's been a constant postponement of the major city builds, and almost all are now underway."

Leading the push for more converters and electronics to upgrade its systems is TCI, the giant MSO serving nearly 4 million subscribers. In many systems, as many as five new channels are being added to the basic lineup as tiers are compressed and rates increased, said Director of Engineering Dave Willis. Consequently, millions must be spent to provide converters to subscribers lacking cable-compatible televisions.

TCI's new rate structure has kept contract installers hopping, said Fred Baker, president of Baker Installations, headquartered in the Northeast. "Operators are finding that some areas are now more profitable to install because of the freedom to set rates," said Baker,

who works for many of the top 20 MSOs.

The huge restructuring program leaves Willis doubting that he'll be able to finish his 1987 construction program on time. The addition of more channels and converters has "pushed planning back a ways," said Willis. "I think there's a good chance that we'll fall a little behind" in construction activity, which grows annually, along with the company, he said.

Year of the rebuild

"We're looking at a lot of business in '87," said George Ferguson, vice president of Cable Services Co., a

full-service contractor and distributor. Because of all the horse trading, systems were often "patched up" prior to them going on the block. "This year, they (new owners) know they have to do something," said Ferguson.

Tom Polis, executive vice president of Communication Construction Group, a division of RT/Katek, is seeing so much demand for rebuild work spurred by deregulation and acquisitions he's dubbed 1987 "The Year of the Rebuild." "I think what's happening is the dust is starting to settle and

now the new owners are living up to the promises by extending the system's frequency capability and adding new channels," said Polis.

The marketplace has "turned around quite a bit over the past two years" indicating the start of the next round of construction, which will be primarily rebuilds, Polis said. "If half of what the MSOs say they're going to do this year comes true, it's going to be a banner year for construction."

The sale of Group W took a significant number of systems out of the 1986 construction rotation, which will have to be made up this year, said industry observers. And apparently they are correct. Comcast, which acquired several former Group W properties, plans a "tremendous" increase in construction over past years, focusing primarily on those systems, said Frank Ragone, vice president of engineering.

American Cablesystems' big thrust will be on the West Coast, where the

Continued on page 33



Stephen Necessary

Construction Forecast

New plant construction (In miles)	1986 actual	1987 projected
Underground	9,576	8,766
Aerial	17,556	17,538
Total	27,132	26,304
Cost (\$ in thousands)		
Antennas and towers	\$ 3,060	\$ 3,660
Microwave equipment	6,240	13,440
Headend equipment	64,692	13,860
Line amplifiers	32,047	37,124
Cable, trunk and feeder	51,380	60,096
Cable, drop	29,946	38,928
Taps and outlets	14,940	56,262
Traps	13,422	19,116
Earth stations	13,020	6,720
Commercial insertion equipment	6,282	5,232
Other studio and mobile production gear	16,902	22,386
Construction services (make-ready, strand mapping, etc.)	11,280	13,446
Construction labor and equipment	150,300	171,586
Total	\$413,511	\$461,856
Replacement plant construction (In miles)		
Underground	7,674	11,270
Aerial	21,252	37,478
Total	28,926	48,748
Cost (\$ in thousands)		
Antennas and towers	\$ 1,860	\$ 2,658
Microwave equipment	12,300	23,610
Headend equipment	44,406	29,400
Line amplifiers	59,670	120,237
Cable, trunk and feeder	75,126	64,915
Cable, drop	25,056	42,252
Taps and outlets	14,562	27,299
Traps	12,924	19,648
Total	\$245,904	\$330,019
Subscriber equipment (\$ in thousands)		
Converters, non-addressable	\$ 88,800	\$ 207,000
Converters, addressable	227,400	393,600
Add-ons (switchers, remotes, stereo, IPPV, etc.)	9,900	30,900
Total	\$326,100	\$631,500
Grand total	985,515	1,423,375

The results of this survey are derived from a sampling of MSOs and manufacturers, and are estimates based upon information supplied to CableVision. All numbers and company references have been held in strict confidence.

Continued from page 30

fast-growing MSO acquired several systems clustered around Los Angeles. The majority of capital spending will be used to extend those systems, add addressability to existing systems when necessary, install new and additional equipment at the headends and improve the plant, said Andy Devereaux, vice president of engineering.

American will build out more than 1,000 new miles, the majority (800 miles passing 200,000 homes) in Area K, located in the heart of the Los Angeles basin, Devereaux said. Other planned projects include two surrounding systems and a system in Cook County, Ill.

Viacom plans to extend its East Bay (San Francisco) and Seattle systems to take advantage of the population growth, but the 1987 agenda is generally "more of the same" as last year, according to Joe Van Loan, vice president of engineering. However, the outlook for 1987 is somewhat cloudy because the ongoing leveraged buyout is forcing unproductive capital spending to be deferred, said Van Loan.

Despite the LBO, Viacom is planning to buy a "fair amount" of converters this year, necessitated by subscriber growth and tier meltdown in one acquired system. But those converters will likely be the plain variety and will only go where needed. "Whenever possible, we're making do, reusing and so on in order to minimize the investment in converters because of the cable-ready sets out there," said Van Loan.

Lower interest rates have also helped spur construction activity as available money is cheaper than two or three years ago. That has had a "considerable effect" on business at CWY, a Midwest product distributor. According to Terry French, vice president, much of the demand is for metal enclosures, connectors, coaxial cable and passive line gear.

Overall, French expects 1987 sales to be at least 20 percent over last year. "Much of the market is being directed to distributors because manufacturers can't afford to handle the small orders," said French, who is surrounded by construction activity in Detroit, Chicago, Cincinnati and Dayton.

Tele-Wire's Ingram also credits the low-interest economy for stimulating activity. "We were supposed to be in somewhat of a depressed economy because of the new tax law, but that hasn't happened, just the opposite has. The first half (of 1987) will be record sales for us."

Bubble year

Just how long the current round of

spending will last is anyone's guess, but everyone agrees 1987 is a "bubble" year, uncharacteristic of what is to be expected over the next several years.

"We're definitely in a bubble year, both on construction and on converters," said Willis at TCI. "But while I do look at this as a bubble year, I'm sure we'll be doing a substantial amount of work next year also." For instance, Willis believes it's time he became familiar with the pitfalls of installing BTSC stereo, which he expects to see a demand for later in the year.

Distributors and manufacturers are more cautious about the future, unsure of what lies around the next bend. Consequently, they are placing orders



James Faust

and stepping up production slowly, determined not to get stuck with warehouses full of inventory when the bubble bursts.

Pioneer, Jerrold and S-A all reported stepped-up production of converters, but MSOs like United and TCI noted that longer lead times for converter deliveries have become commonplace. Pioneer and S-A said they hope to be caught up sometime this summer, while Jerrold, with three production locations, plans to move more quickly.

"We're increasing our purchases steadily... but with the knowledge that the bottom could fall out any time," said Ingram at Tele-Wire. Others are more optimistic. Jack Forde, president of Times Fiber, sees "slight, but noticeable, growth" from 1987 until 1989. "The reason for that is you're starting to see the replacement of all the cable that was put in 10 or 12 years ago."

Forde identified the interesting trend that MSOs, during the rebuild process, are shopping for quality products and

looking for value instead of the cheapest item on the shelf. "People are beginning to shop more for value than for price, which means they're building them (systems) for keeping, not selling," said Forde. "And that's a level of maturity I've never seen before in the cable business. It's refreshing."

Lee Heller, marketing coordinator at RMS, primarily a supplier of passive devices, believes that trend is helping his business. "We will be quoting more business and, hopefully, getting more business" this year, said Heller. Presently, demand is high for directional taps, indicative of the level of the urban newbuild construction underway in New York City, Detroit, Philadelphia and Los Angeles.

Although they acknowledge the good times can't last, several suppliers predict the future will be buoyed by purchases of impulse ordering technology and add-on devices to improve the connection between cable and in-home electronics.

Zenith and Jerrold expect impulse success stories to continue to drive the demand for addressability. James Faust, president of the cable products division at Zenith, expressed cautious optimism about the future. Describing 1986 as "depressed," Faust predicted the industry would rebound this year. As evidence, Faust said 14 systems have already installed PM-Pulse, a new addressable RF box that sells for under \$100.

Jerrold is so confident of the future of impulse ordering for PPV and home shopping that it has suspended production of its non-impulse converter, said Breen.

American Cablesystems is one of those convinced MSOs. With addressability in nearly every system and some systems 100 percent addressable, American is showing the industry it believes money can be made through IPPV and is now planning to test impulse home shopping. In some systems, it's been taken one step further—via two-way interactive cable. "Most of the problems that plagued it (two-way) 10 years ago have been addressed from a technology point of view," said Devereaux. "Reverse transmissions now operate in the 8- to 12-dB signal-to-noise range, where 10 years ago you needed 28- to 32-dB signal-to-noise. And the cost has come down dramatically."

So, despite the uncertainty over how long the bubble will remain over the industry, most observers are encouraged that the burst of energy happened at all and remain optimistic about what the temporary boom portends for the future. After a disastrous 1986, things have apparently returned to normal—with a vengeance. ■

CABLE STATS

Cable Industry Growth Chart

YEAR	TVHH	Homes Passed	Basic Subscribers	% of TVHH	Pay Subscribers	% of TVHH
1990E	93,900,000	81,783,000	50,706,000	54	32,959,000	35
1989E	92,800,000	79,109,000	48,256,000	52	30,883,000	33
1988E	91,000,000	75,833,000	45,500,000	50	28,665,000	32
1987E	89,300,000	71,137,000	41,971,000	47	26,022,000	30
1986E	87,800,000	68,121,000	39,510,000	45	24,101,000	27
1985	86,304,000	64,571,000	36,120,000	42	21,672,000	25
1984	84,600,000	59,989,000	32,994,000	39	19,764,000	23
1983	83,500,000	53,641,000	30,300,000	36	17,877,000	21
1982	82,800,000	49,100,000	28,200,000	34	15,898,000	19
1981	80,700,000	44,000,000	22,596,000	28	11,804,000	15
1980	77,800,000	37,300,000	18,672,000	24	7,780,000	10
1979	76,300,000	32,700,000	16,023,000	21	5,341,000	7
1978	74,500,000	27,200,000	14,155,000	19	2,980,000	4
1977	73,300,000	24,894,000	13,194,000	18	1,466,000	2
1976	71,114,000	21,989,000	12,094,000	17	505,000	1
1975	69,600,000	19,900,000	11,136,000	16	N A	N A

Source: CableProFile Data Base, INTERNATIONAL COMMUNICATIONS RESEARCH.

Cable barometer

Television households (TVHH)	86,304,000
Homes passed by cable (HP)	64,571,000
Percent of TVHH passed by cable	74.7%
Basic cable subs	36,120,000
Percent of TVHH with basic cable	41.8%
Percent of HP with basic cable	56.0%
Pay cable subs	21,672,000
Percent of TVHH with pay cable	25.1%
Percent of HP with pay cable	33.6%
Percent of basic subs with pay cable	60.0%

Satellite lineup

Satcom III-R (RCA Americom)

Transponder	
Arts & Entertainment	24
BET	20
Cable Radio Network	4
Cable Value Network	18
Cinemax (West)	23
ESPN (Blackout)	7
Eternal Word Television Network	12
Financial News Network	4
Genesis Storytime	3
HBO (West)	13
HSN2	2, 16
HTN	16
Home Shopping Network	22
The Learning Channel	2
Lifetime	17
MTV	11
National Jewish Television	18
Nickelodeon	1
PTL	2
QVC Network	8
Reuter Monitor Service	18
Showtime (West)	10
Tempo Television	6
TV Decisions	24
Trinity Broadcasting Network	3
USA Network (West)	9
Video Hits One	15
Viewer's Choice	5
The Weather Channel	19

Satcom IV (RCA Americom)

Transponder	
Alternate View Network	10
American Movie Classics	10
Biznet	6
Bravo	2
Consumer Discount Network	20, 24
Hit Video USA	18
Home Sports Entertainment	11
Home Team Sports	22
Innovations In Living (HSN2)	1
Liberty Broadcasting Network	7
Madison Square Garden	6
New England Sports Network	13
Nickelodeon (West)	4
Nostalgia Channel	21
The Playboy Channel	24
Prime Ticket	20
Rock Christian Network	3
The Silent Network	23V
SportsVision	9
WPIX—New York	19

Westar III (Western Union)

Transponder	
CNN	5

Westar IV (Western Union)

Transponder	
Atlantic City Horse Racing	5

Cable News Network (CNN)	16
Catholic Telecommunications Network of America	11
International Television Network	10D
Public Broadcasting Service	15, 17, 21, 23
Texas State Network	2
Word of Faith Satellite Network	6

Westar V (Western Union)

Transponder	
Fantasy Unrestricted Network (FUN)	24
FUN Weekend Pay-per-view	24
Pro-Am Sports System (PASS)	14
The University Network	2
Zephyr Weather Information Service	7D

Telstar 303 (AT&T)

Transponder	
American Extra	19
Country Music Television (CMTV)	18
KTVT (Dallas)	
SelectTV	

Galaxy I (Hughes)

Transponder	
CBN Cable Network	11
Cinemax (East)	19
CNN	7
C-SPAN	13
The Discovery Channel	22
The Disney Channel (East)	4
(West)	24
EPG	3
ESPN	9
GalaVision	20
HBO (East)	23
Headline News	8
Keyfax National Teletext Magazine	18
Moody Broadcasting Network	3
The Movie Channel (East)	10
(West)	14
The Nashville Network	2
PTL	17
Request Television	12
Seeburg Adult Contemporary	3
Seeburg Contemporary Instrumental	3
Showtime (East)	5
SIN	
USA Network (East, Central)	2
Viewer's Choice 2	16
WGN	3
WOR-TV	15
WTBS	18

Galaxy III

Transponder	
The Meadows Racing Network	17
Sky Merchant	11

Spacenet I (GTE)

Transponder	
ACTS	15

Note: A company name in parentheses following a service or network designates the transponder owner.
Source: International Thomson Communications Inc.

Top 100 MSOs

Rank	Multiple system operator	Basic subs	
1	Tele-Communications Inc.	3,900,000	(12.85)
2	American Television and Communications Corp.	3,400,000	(2.87)
3	Storer Cable Communications	1,389,000	(12.86)
4	Cox Cable Communications	1,355,195	(1.87)
5	Continental Cablevision	1,339,000	(10.86)
6	Warner Cable Communications Inc.	1,309,000	(1.87)
7	Comcast	1,103,145	(9.86)
8	United Cable	1,080,137	(11.86)
9	Newhouse Broadcasting	1,002,340	(11.86)
10	Heritage Communications Inc.	978,547	(12.86)
11	Viacom Cablevision	940,000	(11.86)
12	Jones Intercable	902,023	(2.87)
13	Times Mirror Cable Television Inc.	836,077	(11.86)
14	Sammons Communications Inc.	817,842	(12.86)
15	UA Cablestems Corp.	753,363	(11.86)
16	Cablevision Systems Corp.	687,000	(12.86)
17	Century Communications Corp.	600,000	(12.86)
18	Rogers Cablestems Inc.	555,589	(10.86)
19	Paragon Cable	550,000	(1.87)
20	Telecast Corp.	489,437	(11.86)
21	Daniels & Associates	452,825	(9.86)
22	American Cablestems Corp.	421,916	(12.86)
23	McCaw Communications	416,545	(10.86)
24	Centel Cable	384,825	(10.86)
25	Falcon Cable	379,000	(12.86)
26	Post-Newsweek	365,366	(10.86)
27	Cable Vision Industries	357,077	(12.86)
28	Scripps-Howard	349,155	(10.86)
29	Adelphia Communications	346,707	(12.86)
30	Wometco Cable TV Inc.	336,820	(1.87)
31	TCA Group	294,702	(8.86)
32	Multimedia Cablevision	293,704	(12.86)
33	Prime Cable Corp.	272,843	(11.86)
34	Colony Communications Inc.	253,263	(11.86)
35	Maclean Hunter Cable TV Ltd.	242,593	(10.86)
36	Lenfest Group	233,806	(12.86)
37	Western Communications	230,000	(1.87)
38	Tele-Media	215,000	(7.86)
39	Communications Service Inc.	210,000	(12.86)
40	Rifkin & Associates	200,000	(1.87)
41	Service Electric Cable TV Inc.	195,000	(7.86)
42	TKR Cable Co.	186,139	(1.87)
43	TCI-Ta	180,330	(11.86)
44	Cencom Cable	177,793	(12.86)
45	Sutton Capital Corp.	166,561	(2.86)
46	Hausser Communications Inc.	165,000	(12.86)
47	Adams-Russell Communications	156,000	(12.86)
48	Harte-Hanks Communications	150,144	(12.86)
49	Harron Communications	148,412	(12.86)
50	Greater Media	146,409	(12.86)
51	Armstrong Utilities	137,587	(12.86)
52	Media General Inc.	136,200	(11.86)
53	Marcus Communications	134,119	(12.86)
54	Televents Inc.	128,734	(11.86)
55	Harris Cable Corp.	123,920	(11.86)
56	Palmer Communications	122,378	(12.86)
57	Summit Communications	115,405	(11.86)
58	First Carolina Communications Inc.	114,104	(1.87)
59	The Essex Group	113,273	(12.86)
60	U.S. Cable Corp.	111,461	(12.86)
61	Sonic Communications	110,000	(7.86)
62	Blade Communications	105,000	(7.86)
63	Columbia International	105,000	(1.87)
64	Scott Cable Communications	105,000	(3.86)
65	Multi-Channel TV Cable Inc.	104,585	(12.86)
66	Northland Communications	103,550	(1.87)
67	Booth Communications	102,825	(11.86)
68	Simmons Communications	101,720	(12.86)
69	James Communications	95,000	(12.86)
70	King Videocable	94,727	(11.86)
71	M.L. Media Partners	94,000	(1.87)
72	Perry Cable TV Corp.	91,306	(8.86)
73	McDonald Group	90,079	(8.84)
74	Susquehanna Broadcasting	89,701	(10.86)
75	WEHCO Video	85,807	(10.86)
76	Midcontinent Cable Systems Co.	79,821	(12.86)
77	Bresnan Communications Co.	78,170	(1.87)
78	Pencor Services	76,857	(11.86)
79	Omega Communications	74,213	(11.86)
80	Wisconsin Cablevision and Radio Co.	63,910	(1.87)
81	Selkirk Communications	63,000	(11.86)
82	CA Media Corp.	62,000	(9.86)
83	Acton Corp.	60,035	(1.87)
84	Mountain Cable Co.	56,270	(1.87)
85	United Video Management	55,905	(12.86)
86	Tidel Communications	55,442	(12.86)
87	Helicon Corp.	55,000	(11.86)
88	Masada Corp.	53,237	(7.86)
89	Chambers Communications Corp.	53,093	(12.86)
90	Cardinal Communications	53,000	(12.86)
91	Inight Communications	50,000	(2.87)
92	Enstar Communications	49,974	(1.87)
93	State Cable TV	47,933	(11.86)
94	Joseph Gans Cable TV	46,532	(11.86)
95	Dowden Cable	45,385	(1.87)
96	Commonwealth Cable Systems	43,425	(1.87)
97	Donrey Cablevision	43,423	(1.87)
98	New England Cablevision	42,870	(12.86)
99	North American Comm. Corp.	37,710	(6.86)
100	Hearst Communications of California	37,016	(9.86)

Subscriber counts are provided by MSOs and systems to International Thomson Communications Inc. Figures will be updated quarterly unless information is provided by MSOs or systems. Send updates to CableVision, Attention Cable Stats, P.O. Box 5208-TA, Denver, CO 80217. * Includes portion of Group W subscribers.

Top 100 systems

Rank	Location	Operator	Basic subs
1	San Diego, CA	Cox Cable	277,991 (1.87)
2	Woodbury (Long Island), NY	Cablevision Co.	275,162 (12.86)
3	Manhattan, NY	ATC	219,600 (12.85)
4	San Antonio, TX	Rogers	198,736 (11.86)
5	Houston, TX	Warner	189,900 (11.86)
6	East Orange, NJ	Maclean Hunter	184,841 (10.86)
7	Seattle Snohomish, WA	Viacom	171,000 (11.86)
8	Honolulu, HI	ATC	164,300 (12.85)
9	Louisville-Jeff. Co., KY	Storer Communications	155,000 (12.86)
10	Cincinnati, OH	Warner	155,100 (1.87)
11	Phoenix, AZ	Times Mirror	152,214 (11.86)
12	Englewood, CO	United Cable	150,775 (12.86)
13	Wayne, NJ	UA Cablestems	149,685 (11.86)
14	St. Louis Co., MO	Cencom Cable	145,172 (12.86)
15	Tulsa, OK	United Cable	143,684 (1.87)
16	Rochester, NY	ATC	141,000 (1.87)
17	Cherry Hills, NJ	NYT	140,105 (1.87)
18	Hampton Roads, VA	Cox Cable	139,336 (1.87)
19	Hartford Plainville, CT	United Cable	136,705 (12.86)
20	Jacksonville, FL	Continental	133,068 (12.86)
21	Buffalo, NY	Adelphia Communications	132,209 (12.86)
22	Atlanta, GA	Prime Cable Corp.	132,133 (11.86)
23	Florida Division (Orlando-Ormond Beach)	ATC	128,100 (12.85)
24	Seattle, WA	Tele-Communications Inc.	127,000 (5.86)
25	Fairfax, VA	Media General	125,991 (11.86)
26	Baltimore County, MD	Comcast	122,730 (9.86)
27	San Jose, CA	Gill Industries	119,100 (2.87)
28	Eric County, NY	Prime Cable Corp.	119,002 (11.85)
29	Manhattan, NY	Paragon Cable	115,000 (5.86)
30	Kansas City, MO	ATC	114,600 (12.85)
31	Long Island, NY	Viacom	110,000 (11.86)
32	Austin, TX	ATC	109,700 (12.85)
33	Central Islip (Long Island), NY	Viacom	109,000 (9.86)
34	Memphis, TN	ATC	106,900 (12.85)
35	San Juan, PR	Harris Cable Corp.	104,823 (11.86)
36	Toledo, OH	Blade Communications	103,982 (4.86)
37	Los Angeles, CA	Falcon	103,869 (4.86)
38	San Francisco, CA	Viacom	103,000 (11.86)
39	Warren, NJ	TKR	101,406 (2.87)
40	Pompano, FL	American Cablestems	99,137 (12.86)
41	Dallas, TX	Heritage	97,253 (12.86)
42	Jefferson Parish Kenner, LA	Cox Cable	96,756 (1.87)
43	Southeast Michigan	Comcast	96,454 (9.86)
44	Pinellas County, FL	Vision Cable	93,980 (1.87)
45	San Diego, CA	ATC	92,200 (12.85)
46	Grand Rapids, MI	UA Cablestems	91,480 (11.86)
47	Wilmington, DE	Heritage	91,049 (12.86)
48	Dade Broward, FL	Storer	88,651 (12.86)
49	Escondido, CA	Times Mirror	85,678 (9.86)
50	Richmond, VA	Continental	85,631 (12.86)
51	Pittsburgh, PA	Tele-Communications Inc.	84,517 (6.86)
52	Jackson, Monroe, MS	ATC	82,500 (12.85)
53	Wichita, KS	Multimedia Cablevision	82,172 (12.86)
54	Tacoma, WA	Viacom	81,048 (2.87)
55	Indianapolis, IN	Indianapolis Cablevision Inc.	80,969 (5.86)
56	Boston, MA	Cablevision	79,100 (12.86)
57	Charlotte, NC	ATC	78,700 (12.85)
58	Harrisburg, PA	Sammons Communications	78,652 (12.86)
59	Flint, MI	Comcast Cable	78,349 (9.86)
60	Puget Sound, WA	Viacom	78,000 (9.86)
61	Raleigh, N.C.	ATC	77,600 (12.85)
62	Baton Rouge, LA	Daniels & Assoc.	77,478 (1.87)
63	South Texas, TX	Heritage	75,318 (12.86)
64	Chicago, IL	Westinghouse Broadcasting	75,000 (4.86)
65	Greensboro, NC	ATC	74,100 (12.85)
66	Santa Monica, CA	Century	74,000 (5.86)
67	South Bend, IN	Heritage	73,166 (10.86)
68	New Orleans, LA	Cox Cable	72,959 (1.87)
69	Las Vegas, NV	Prime	72,283 (11.86)
70	Orange County, CA	Times Mirror	72,124 (9.86)
71	Nashville, TN	Viacom	72,000 (11.86)
72	Cleveland Heights, OH	Viacom	71,000 (11.86)
73	Contra Costa Co., CA	Televents	70,665 (11.86)
74	Milwaukee, WI	Warner	70,182 (11.86)
75	Allentown, PA	Service Elec.	70,000 (7.86)
76	Akron, OH	Warner	69,055 (11.86)
77	Fayetteville, NC	ATC	69,000 (9.86)
78	Columbus, OH	Warner	69,500 (11.87)
79	Little Rock, AR	Storer	68,354 (12.86)
80	Omaha, NE	Cox Cable	67,868 (12.86)
81	Medford Complex (Boston Suburbs), MA	Warner	67,400 (11.86)
82	Birmingham, AL	ATC	66,200 (11.86)
83	Ocean County, NJ	Adelphia	66,051 (6.86)
84	Des Moines, IA	Heritage	65,953 (12.86)
85	Westchester Co., NY	UA Cablestems	65,506 (11.86)
86	New Haven, CT	Storer	64,975 (12.86)
87	St. Petersburg, FL	Paragon Cable	64,478 (5.86)
88	Sarasota, FL	Storer	64,069 (12.86)
89	Syracuse (suburbs), NY	NewChannels Corp.	64,065 (9.86)
90	Indianapolis, IN	ATC	64,000 (12.85)
91	Greater Bridgeport, CT	Cablevision Co.	63,780 (12.86)
92	Monterey, CA	Western Communications	63,731 (10.86)
93	Oklahoma City, OK	Cox Cable	63,134 (1.87)
94	Lower Fairfield Co., CT	Cablevision Co.	63,028 (12.86)
95	Santa Barbara, CA	Cox Cable	62,678 (1.87)
96	Winston-Salem, N.C.	Summit	62,238 (11.86)
97	Madison, WI	Tele-Communications Inc.	62,099 (5.86)
98	El Paso, TX	Group W (ATC)	62,000 (9.86)
99	Charleston, S.C.	Storer	61,910 (12.86)
100	Albany, GA	Storer	61,123 (12.86)